Remarks

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and the following remarks. Claims 1, 4-7, 9-21, and 24-30 are pending in the application. Claims 1, 4-7, 9-21, and 24-30 are rejected. No claims have been allowed. Claims 1, 11, 17, and 21 are independent.

Request for Information Disclosure Statement to be Reviewed

Applicants note that the Action does not include a fully-initialed copy of the Form 1449 which accompanied an Information Disclosure Statement filed on September 27, 2006 (all references have been initialed **except** the foreign patent reference). Applicants request the Examiner provide an initialed copy of the Form 1449.

Cited Art

The Action cites:

Pileggi et al., U.S. Patent Application No. 2003/0046045 (hereinafter "Pileggi");

Applicant's Admitted Prior Art (hereinafter "AAPA");

Li et al., "A Frequency Relaxation Approach for Analog/RF System-Level Simulation" (hereinafter "Li");

McGauhy et al., U.S. Patent No. 7,143,021 (hereinafter "McGauhy");

Gabele et al., U.S. Patent Publication No. 2003/0135354 (hereinafter "Gabele"); and

Du, U.S. Patent Publication No. 2003/0125914 (hereinafter "Du").

Claim Rejections under 35 U.S.C. § 102

The Action rejects claims 11-12, 16-17, 20-21, and 27 under 35 USC 102(b) as being anticipated by Pileggi. Applicants respectfully submit the claims are allowable over the cited art. For a 102(b) rejection to be proper, the cited art must show each and every element as set forth in a claim. (*See* MPEP § 2131.01.) However, the cited art does not describe each and every element. Accordingly, applicants request that all rejections be withdrawn. Claims 11, 17, and 21 are independent.

Pileggi teaches away from the present claims. Pileggi clearly partitions based on linear elements and non-linear elements, as discussed at page 2, paragraph 0027:

> step **102** the overall system is partitioned into linear and non-linear subnetworks. At step **104**, each non-linear element is replaced with a linearized equivalent circuit that captures a large-signal operating point or small-signal equivalent circuit model. At step **106**, the linearized equivalents are collapsed into the linear subnetwork to form a linear, time-invariant system with independent, non-linear driving sources. At step **108**, characteristic functions for the non-linear, driving sources are defined through simulation and applied to the time-invariant, linear system to produce simulation results, and/or optionally to generate a macro-model as shown at **110**.

Pileggi then eliminates the non-linear elements as much as possible because "nonlinearities...require harmonic balance methods which include nonlinearities via iterations between the time and frequency domain. The accuracy requirements and aliasing tolerances for harmonic balance type methods...can render such methods ineffective." Paragraph [0002].

Figure 3A-3D of Pileggi shows how non-linearities are reduced. Figure 3A of Pileggi shows a circuit including linear elements (resistors, capacitors and inductors) and non-linear elements (transistors). Figure 3B shows the partitioning into linear elements and non-linear elements. Figure 3C shows that the non-linear elements are replaced with linear current sources (paragraph 35). Figure 3D shows the final linearized network. Therefore, Pileggi is clearly trying to reduce non-linear elements and the analysis associated therewith.

By contrast, claim 11 requires that there is partitioning into analog and RF, both of which are non-linear, in order to create two sets of equations that are non-linear. Additionally, one set of non-linear equations is associated with an analog partition and one set of non-linear equations is associated with an RF partition:

> " by interrelately solving two sets of non-linear equations until convergence, the two sets of non-linear equations including a first set of non-linear equations related to the at least one analog partition and a second set of non-linear equations related to the at least one RF partition."

Thus, the Examiner clearly cannot show that Pileggi teaches partitioning as required by the claims. Indeed, Pileggi's goal is to linearize the circuit, not solve non-linear equations as required by claim 11.

Claim 17 has also been amended to require solving two sets of non-linear equations:

"means for simulating, in a single simulation flow, the first set of nodes using time-domain representations of signals and the second set of nodes using time-frequency domain representations of signals by using two sets of non-linear equations and solving the two sets in an interrelated manner until convergence."

As discussed above, Pileggi teaches away from trying to solve non-linear equations by linearizing the circuit to avoid nonlinearities.

Claim 21 also includes language associated with the non-linear equations:

"interrelately solving two sets of non-linear equations until convergence, the two sets of equations including a first set of non-linear equations related to the time-domain signals and a second set of non-linear equations related to the time-frequency domain signals and partitioning the circuit into at least one analog partition including one or more nodes and components from the first set and at least one RF partition including one or more nodes and components from the second set with a solution of the at least one analog partition affecting a solution of the at least one RF partition and vice versa."

For the reasons stated above, claims 11-12, 16-17, 20-21, and 27 should be in condition for allowance and such action is respectfully requested.

Claim Rejections under 35 U.S.C. § 103(a)

The Action rejects all claims under 35 U.S.C § 103(a) as unpatentable over Pileggi in combination with AAPA and other references including McGauhy, Li, Gabele, and Du.

It is clear from the background of Pileggi that the goal is to eliminate having to solve the circuit using nonlinearities. See paragraph 0002. The present claims, by contrast, require partitioning into analog and RF, both of which are non-linear.

Claim 1 requires the following: "in the single simulation flow, partitioning the circuit into at least one analog partition including one or more nodes and components from the first set and associated with the first set of non-linear equations and at least one RF partition including one or more nodes and components from the second set and associated with the second set of non-linear equations, with a solution of the non-linear equations associated with the at least one analog partition affecting a solution of the non-linear equations associated with the at least one RF partition and vice versa."

As described above, Pileggi teaches away from partitioning analog and RF circuits, both of which are non-linear. Instead, Pileggi teaches partitioning into linear and non-linear.

As Pileggi was used to reject all claims, it is believed that all claim rejections are therefore overcome.

Interview Request

If the claims are not found by the Examiner to be allowable, the Examiner is requested to call the undersigned attorney to set up an interview to discuss this application.
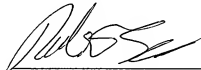
Conclusion

The claims in their present form should be allowable. Such action is respectfully requested.

Respectfully submitted,

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